

UNITED STATES PATENT OFFICE.

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PRINTING-TELEGRAPH.

No. 888,335.

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To all whom it may concern:

Be it known that I, CHARLES L. KRUM, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Printing-Telegraphs, of which the following is a full, clear, and exact description.

This invention has relation more particularly to that class of printing telegraphs in which the messages transmitted are reproduced at the receiving station by being printed upon sheets of paper as in ordinary typewriter work.

The main object of the invention is to provide improved means for the reproduction of the messages at the receiving station although features of the invention will be found applicable for use in other situations.

The invention consists in the features of improvement hereinafter described, illustrated in the accompanying drawings and particularly pointed out in the claims at the end of this specification.

Figure 1 is a front view of my improved machine, certain parts being omitted. Fig. 2 is a view in rear elevation. Fig. 3 is a view in horizontal section through the main frame of the machine, the upper parts of the mechanism being omitted. Fig. 4 is a view in vertical cross-section. Fig. 5 is an enlarged detail view of part of the mechanism for actuating the inking ribbon. Fig. 6 is a view in vertical cross-section adjacent the inner side wall of the main frame, parts being shown in elevation. Fig. 7 is a view in horizontal section through the base portion of the main frame a slight distance above the key levers, the finger pieces of the key levers being shown in plan. Fig. 8 is a plan view of the upper portion of the main frame, certain parts sustained thereby and the main paper carriage upon the main frame. Fig. 9 is a detail view showing one of the key levers and circuit controlling mechanism at the inner end thereof, parts being shown in vertical section. Fig. 10 is a detail plan view of the key lever shown in Fig. 9. Fig. 11 is an enlarged detail plan view of the inner end of one of the key levers, the contact brushes being removed. Fig. 12 is a detail view in rear elevation of the bars that support the contact plates with which the key lever brushes cooperate. Fig. 13 is a detail view in perspective of one of the contact strips. Fig. 14 is a detail perspective view of one of the individual contact plates. Fig.

15 is a detail view in vertical longitudinal section through the frame of the main paper carriage showing the contact rail beneath the same. Fig. 16 is a detail plan view of the main paper carriage, its supporting rails and the contact rail beneath the main carriage. Fig. 17 is a view in central cross-section through the parts shown in Figs. 15 and 16. Fig. 18 is a detail plan view of the part of the main frame above the paper carriage platen together with the type bars, their hangers and part of the inking ribbon mechanism. Fig. 19 is a detail view in front elevation of the platen, a part of the inking ribbon and its support in front thereof and certain of the type bars. Fig. 20 is a detail plan view of the platen and mechanism for feeding the paper thereto and adjacent parts. Fig. 21 is a view in vertical cross-section through the supplemental paper carriage or platen support adjacent one end of the platen, certain parts being shown in cross-section. Fig. 22 is a detail view in end elevation of the platen supporting frame, the platen and part of the mechanism for effecting the line-space movement of the platen. Fig. 23 is an enlarged detail view in front elevation of the inking ribbon and parts of the mechanism whereby it is supported and controlled. Fig. 24 is an enlarged detail view of the pawl and ratchet mechanism for imparting the letter-space movement to the paper carriage, adjacent parts being shown in elevation. Fig. 25 is a detail view in vertical cross-section through the main paper carriage, the spring drum for retracting said carriage, and the carriage rails, certain connected parts being shown in elevation. Fig. 26 is a view in cross-section on line $y-y$ of Fig. 25, the parts being shown inverted. Fig. 27 is a detail plan view of the carriage retracting spring and drum with the cover removed. Figs. 28 and 29 are diagrams of the operating circuits.

The various details of construction will first be described and thereafter the electrical circuits and connections whereby the operation of the parts is effected will be set forth.

The frame A of the machine will be of the appropriate construction and shape to receive the various parts of the mechanism. As shown, the front of the frame is stepped (see Figs. 4 and 6) to form a key board through which extend the stems b of the key levers B, the heads of the stems b being provided with the usual finger pieces marked with characters corresponding to the various